

Froth imager

Ethernet for OPC and video streaming



Connection box

110 / 230 VAC

Optional 4...20 mA analog outputs
Optional analog video out

FrothMaster™ 2

FrothMaster™ 2 system

FrothMaster™ is a tool for real-time froth surface analysis. The FrothMaster™ system measures several essential properties of froth appearance including froth speed, bubble size, froth stability and froth color and provides statistical data related to these variables. The measured froth properties, together with on-stream analyzer assays, enable expert control of the flotation circuit.

In addition, using advanced web server technology, FrothMaster™ provides the option for convenient monitoring of froth characteristics anywhere in the world.

Flotation plant operators use visual information of froth appearance for operative decisions. Froth camera system is a tool to overcome subjective factors and provide consistent information 24 hours a day for process control and optimization.

A typical FrothMaster™ installation has several froth imagers mounted on top of flotation machines. The imagers are networked through intelligent connection boxes to a FrothManager station, which acts as a gateway to the plant automation system and office network. The FrothManager station can run optional ACT expert system applications for flotation circuit froth recovery, mass balancing and adaptive cell level controls.

The FrothMaster™ 2 imager module FIS 6210 consists of a high-resolution color camera, controlled light and optional sunshade. The imager module is designed for flotation plant environment and is IP65 rated.

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Specifications

FrothMaster™ 2 Imagers

Dimensions:

- Imager with shade tube: height 1200 mm, Ø500 mm
- Imager without shade tube: height 300 mm, Ø280 mm
- Connection box: 600 x 380 x 220 mm
- Max Imager to connection box distance is 100 m

Weight:

- Imager FIS 6210 with shade tube: 40 kg
- Imager without shade tube: 15 kg
- Connection box: 25 kg

Operating environment:

- Imager: IP 65 / Nema 4, PEH
- Connection box: IP 65 / Nema 4X, epoxy painted AISI 304 stainless steel
- -10°C to 45°C, 5 to 85%, non-condensing

Storage temperature:

- - 10°C to 50°C, 5 to 85%, non-condensing

Power requirements:

- 110/230 VAC, 50/60 Hz, max 200W (one imager and connection box)

Measurements:

- Froth speed and direction
- Bubble size distribution
- Froth stability
- Color histogram (R, G, B)
- Statistical information

Imager setup and diagnostics:

- WebFire web server embedded in each imager

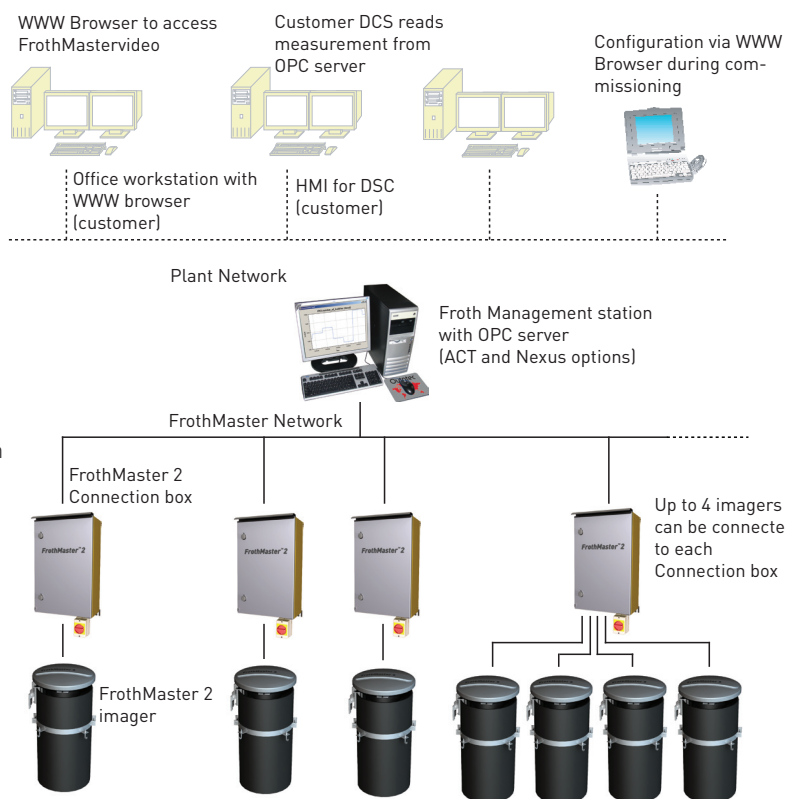
FrothMaster™ 2 System

FrothMaster™ 2 network:

- Up to 40 instruments in one network
- Industrial grade Ethernet cabling (CAT-5e, IP65) up to 100m
- Multimode fiber optics up to 2 000m available as an option

Froth Management station environment:

- Office or control room environment



Froth Management station power requirements:

- 110/230 VAC, 50/60 Hz, 400W

Froth Management station protocol:

- OPC server for plant DCS system communication

Froth Management station options:

- ACT expert system applications for:
 - froth speed control adaptive, decoupled level control on-line mass balance
- NEXUS self-organizing map (SOM) application for froth type identification

Video image stream display:

- Standard web browser

Outotec quality assurance

FrothMaster™ 2 is CE marked according to the European Union directives. Outotec Minerals unit is ISO 9001 accredited.

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